

# DETERMINANTS OF FINANCIAL PERFORMANCE: AN EMPIRICAL STUDY ON MALAYSIAN ISLAMIC BANKS

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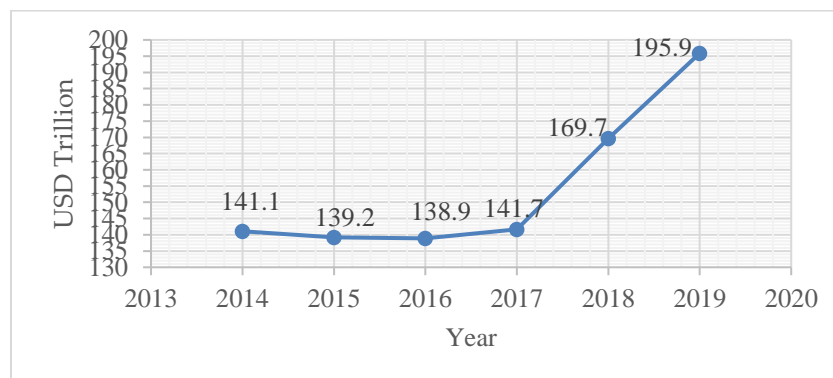
**Abstract:** *The positioning of Islamic banks as economic or social entities has been prominently debated on a global scale as Islamic bank social practices are still being neglected following their current emphasis on financial performance. Hence, this study examines the determinants of financial performance of Malaysian Islamic banks. The study uses panel data analysis, whereby the annual reports of 16 Islamic banks in Malaysia were analysed over a 10-year period from 2010 to 2019. The independent study variables were represented by the six determinants: Shariah-compliant financing, Zakat, advertising, household financing, non-performing financing and operational efficiency. Meanwhile, the dependent counterpart was financial performance proxied by return on asset (ROA) and return on equity (ROE). Multiple regression models consisting of the random-effect and fixed-effect models are incorporated for data evaluation. The findings of the study show a significant influence of Shariah-compliant financing, Zakat, advertising and operational efficiency on financial performance represented by ROA; while the ROE model reports a significant influence of Zakat, advertising, non-performing financing and operational efficiency on ROE of the banks. The study outcomes offer pivotal insights for Islamic banks to improve financial performance in line with its real objectives to support stakeholder interests and facilitate the sustainable economic growth of banks.*

**Keywords:** *Financial performance, Stakeholder Theory, Islamic banks, Malaysia*

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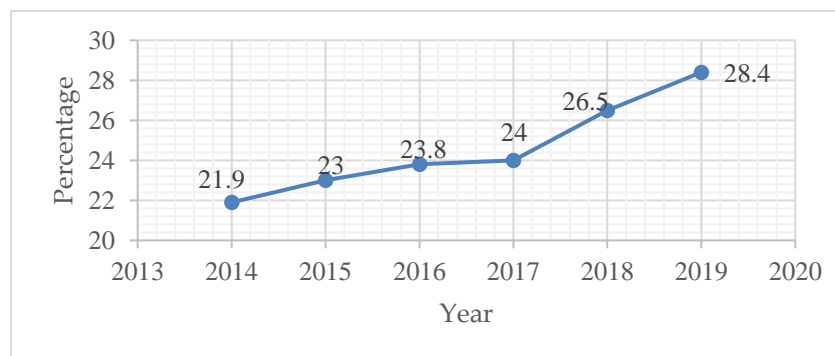
## Introduction

Islamic banking and finance have rapidly advanced in global capital markets and banking systems. The financial performance of Islamic bank asset sizes is on the rise globally (Albaity, Mallek & Noman, 2019) and is projected to increase two-fold parallel to conventional counterparts (Alqahtani & Mayes, 2018). The global asset expansion of Islamic banking industries (from approximately USD 1.77 trillion in 2019) has resulted in the domestic market share growth of Islamic banks worldwide, including Malaysia (Islamic Financial Services Board, 2018). Malaysian Islamic banking sectors have palpably established one of the global Islamic financial markets with high financial performance development on an annual basis. Malaysia is among the top countries offering Islamic banking and finance products and services. Regarding financial performance, Malaysian Islamic banks were ranked among the top financial establishments in 2019 apart from primary international players involving Saudi Arabia, Iran, and the United Arab Emirates (UAE) in dominating the global shares of *Sukuk* issuance (36.8%), Islamic funds (28.1%), and banking assets (11.2%) with higher ROA and ROE than conventional banks (Islamic Financial Services Board, 2020). Notably, Malaysia is also acknowledged as part of the outstanding international Islamic financial hub for the Islamic financial capital market (Thomson Reuters, 2018). The Malaysian local government strives to strengthen this dual banking system where Islamic banking practices complement conventional ones. The total Islamic banking assets in Malaysia amounted to USD195.9 billion (see Figure 1) or 11.1% of the international Islamic banking assets in 2019 due to high Islamic bank financial performance. The market shares drastically rose to 28.4% (see Figure 2) and could reach 40% of the market share in total banking assets by 2020 (Zainul, 2018).



Source: Islamic Financial Service Board, 2020

**Figure 1: Banking Assets of Malaysian Islamic Banks**



Source: Islamic Financial Service Board, 2020

**Figure 2: Percentage of Domestic Market Share of Malaysian Islamic Banks**

Financial performance could be evaluated with multiple indicators. Accounting-based measurements, such as liquidity, profitability, leverage, and turnover ratios are extensively employed for organisations to measure the financial performance. In Mallin et al. (2014), profitability ratios constituting ROA and ROE are widely utilised to assess bank performance and sustainable growth. Notably, both proxies are classified under accounting-based measurement. Essentially, the ROA ratio is computed by dividing net income with the average total assets. Accounting-based ROA, which implies organisational measurement, differs across multiple firms that incorporate efficient asset utilisation measurements. The ROA is broadly employed to demonstrate and evaluate the company operational performance (Dietrich & Wanzenried, 2011; Maqbool & Zamir, 2021). For example, ROA indicates bank financial performance and managerial efficiency, demonstrates organisational competence in profiting from assets and asset management efficiency for revenue generation (Platonova et al., 2018), and ascertains company performance with regard to finance and operations (Klapper & Love, 2004). Overall, high ROA results in optimal asset usage to fulfil shareholder interests (Ibrahim & Abdul Samad, 2011). Meanwhile, ROE is computed by dividing net income by shareholder equity to measure how organisations utilise shareholder funds for profit generation (Ming-Hsiang & Chien-Pang, 2015). In this vein, ROE denotes an optimal index for managers to evaluate company profitability (Saleh et al., 2021). The ROE ratio ascertains whether owners' investment is generating profit, which is worth the risk that an investment may require for revenue generation (Berman, Knight & Case, 2013). As such, ROE functions as financial success or failure indicator for all stakeholders and ascertains whether investing new equity capital into the business or otherwise influences (high or low) profitability (Follett, 2012).

Past studies in Indonesia (Prima Sakti & Mohamad, 2018), Pakistan (Jaafar & Manarvi, 2011; Khan, Khan & Tahir, 2017), Malaysia (Masruki, Ibrahim, Osman & Abdul Wahab, 2011; Sulaiman @ Mohamad, Mohamad & Hashim, 2018), and the Middle East and North Africa (MENA) countries (Mokni & Rachdi, 2014; Johnes et al., 2014) revealed that Islamic bank financial performance is characterised by variances in financial performance with their own benefits over conventional counterparts. A study by Ledhem and Mekidiche (2020) on Islamic banks disclosed that the profit derived from ROE undeniably boosts national economic growth. In addition, financial performance in term of the profitability of global Islamic banking sectors measured by ROE in 2018 (16.3%) was higher than those documented by conventional counterparts over the same duration in both the United States (US) and Europe at 11.9% and 7.2%, respectively (Islamic Financial Services Board, 2019). Furthermore, most empirical works emphasised financial performance measurement with both ROA and ROE as the well-established proxies of accounting-based measurement. The aforementioned proxies have been broadly employed in research encompassing the banking sector (Mallin et al., 2014; Menne et al., 2016; Platonova et al., 2018; Buallay, 2018), including Islamic banks.

## Literature Review and Hypothesis Development

### Shariah-Complaint Financing

Islamic banks only engage in Shariah-compliant activities. The Shariah-compliant financing is one of the novel Islamic bank attributes given its contribution to improving socioeconomic activities. Such Islamic financing portfolios promote economic growth with industrial development (Bougatef et al., 2020; Gani & Bahari 2021) and the creation of novel entrepreneurs (Afkar, 2017). As previously mentioned, the primary reason underlying the prohibition of *riba* in business transactions (particularly in Islamic banking systems) involves justice as only one party would benefit from the earned interest while the other would suffer

from contract-induced losses. Alternatively, the Islamic banking system prevents unjustness among contractual parties. The Profit and Loss Sharing (PLS) concept encompassing interest-free *Mudharabah* and *Musharakah* contracts guide typical Islamic banking products. This contract is also regarded as a partnership contract between banks and borrowers.

Much research examined the impact of equity-based financing on bank performance. In Abbas and Arizah (2019), PLS financing entailing *Mudharabah* and *Musharakah* contract positively influenced the financial performance represented by the Islamic bank ROA and ROE. Meanwhile, Dewi (2019), and Pratama and Febriansyah (2020) revealed that *Mudharabah* and *Musharakah* positively and significantly impacted bank ROA. Syahri and Haryito (2020) similarly disclosed that *Mudharabah* and *Musharakah* positively impacted the bank ROE. Concerning debt-based financing, Afkar (2017), Yusof and Isa (2021), and Ijaiya et al. (2021) asserted that financing contracts encompassing *Murabahah*, *Ijarah*, *Qard Hassan*, and *Bai Ajil* positively influenced the Islamic bank financial performance. Regardless, Afkar (2017) highlighted that *Mudharabah* financing insignificantly impacted profitability as the financing contract offered by the *Mudharabah* scheme failed to impact the bank financial performance.

The aforementioned argument affirmed the proposition developed by the stakeholder theory that relates well with all stakeholders, specifically with Muslim customers, in protecting their religion through Shariah-compliant products and services for high profitability. This study developed the following hypotheses following past literature:

*H1a: There is a positive and significant relationship between Shariah-compliant financing and the ROA of Islamic banks in Malaysia.*

*H1b: There is a positive and significant relationship between Shariah-compliant financing and the ROE of Islamic banks in Malaysia.*

### **Zakat**

As one of the five pillars of Islam, Zakat denotes alms or charity (Al-Malkawi & Javaid, 2017), which is regarded as a wealth redistribution tool and part of one's religious obligation to the poor. Muslims believe that Zakat purifies an individual's soul and wealth to receive Allah's blessings. As the most important instrument for the social redistribution of income and wealth, Zakat is imposed on Islamic business operations for wealth purification (Abu Bakar & Abd Ghani, 2011). The Zakat contributions could also facilitate companies towards fulfilling their obligations to both God and the society at large. Regarding the real Islamic banking and financing objectives toward social welfare and benefit attainment, Zakat could be regarded as a means of generating revenues while considering community welfare as a whole.

Past studies indicated a significant impact of Zakat on society and the economy. Research involving the Zakat effect on poverty in Malaysia (Senadjki & Sulaiman, 2015), Indonesia (Herianigrum et al., 2020), and Bangladesh (Ali et. al. 2019) disclosed that Zakat substantially reduced poverty in the sample's nations. The Zakat is also a part of the faith-related model that demonstrates Islamic values for poverty alleviation. In this vein, Zakat reflects a substantial impact on economic progress. A study by Suprayitno (2019) examined the effect of Zakat contribution on macroeconomics in Malaysia revealed that Zakat positively and significantly related to economic growth, consumption, and investment. Likewise, a recent study of Jedidia and Guerbouj (2020) investigated the Zakat influence on the economic growth of eight Muslim nations (Senegal, Indonesia, Sudan, Malaysia, Qatar, the UAE, Kuwait, and Saudi Arabia) between 2004 and 2017 highlighted that Zakat catalysed national growth following its emphasis

on consumption, investment, or government expenditure. The sample nations were chosen based on their economic income level.

Multiple studies have examined whether Zakat influenced company performance. Past literature on the influence of Zakat on financial performance was performed by Al-Homaidi et al. (2021) who disclosed that Zakat contributions by Islamic banks positively impacted their financial performance, which was proxied by ROA and ROE. Meanwhile, Auliyah and Basuki (2021) revealed that Zakat positively affected organisational ROA. Al-Malkawi and Javaid (2017) implied that Zakat positively influenced the organisational ROE. Resultantly, Zakat positively boosted company profitability as an exceptional means of increasing financial performance while simultaneously regarding society as a whole.

The aforementioned arguments proved the proposed stakeholder theory from an Islamic perspective where Islamic banking and finance institutions should place emphasis on stakeholder interests by integrating their social and Islamic values with economic development when communicating with stakeholders and performing in business growth (Dusuki, 2008). The following hypotheses were proposed in line with past literature:

*H2a: There is a positive and significant relationship between Zakat and the ROA of Islamic banks in Malaysia.*

*H2b: There is a positive and significant relationship between Zakat and the ROE of Islamic banks in Malaysia.*

### **Advertising**

Marketing awareness campaigns, such as advertising activities could familiarise customers with the principles of Shariah compliance and features of Islamic bank products (Chauhan & Rasheed, 2015). According to Jan et al. (2019) advertising increases income and customers' awareness and knowledge by influencing short-term and long-term consumer preferences. Meanwhile, a study by Muhammad, Basha and Alhafidh (2019) in the UAE proved that the advertising approaches undertaken by Islamic banks significantly impacted customers' attitudes towards Islamic bank products and services. In Ahmad and Al Aidaros (2017), Islamic banks must measure marketing effectiveness and customer satisfaction to sustain market relevance.

Most empirical works (Haque, et al., 2010; Ahmad & Al-Aidaros, 2017) proposed that Islamic banks need to utilise holistic and comprehensive marketing techniques in resolving the issues arising from low awareness on Islamic banking products and services for competitive advantage and relevance in the marketplace. In line with the aforementioned studies, specific marketing approaches (advertising) could educate the public on Islamic banking products and expose community members to Islamic principles in daily financial activities.

Various studies identified the essentiality of marketing methods, such as advertising on company performance (Kim, Jun & Tang, 2019). In this vein, organisations could enhance their financial performance by optimising marketing competence through effective advertising approaches. The aforementioned discussions proved the proposal of stakeholder theory that relating well with stakeholders especially customers will lead to performance enhancement. The following hypotheses were developed based on past study outcomes:

*H3a: There is a positive and significant relationship between advertising and the ROA of Islamic banks in Malaysia.*

*H3a: There is a positive and significant relationship between advertising and the ROE of Islamic banks in Malaysia.*

### **Household Financing**

Households or consumers commonly denote individuals or families while the household sector implies a crucial economic component (Xiao & Toa, 2020). Meanwhile, household financing defines the act of borrowing for personal or family-oriented reasons. Families experience various economic needs to be fulfilled with borrowed money given the availability of multiple household financing sources. Such financing facilitates households to meet essential needs. For example, families and individuals utilise household financing to fund several expense types, such as purchasing a house, which necessitates a mortgage loan with a monthly repayment schedule for the next few decades. The household financing might also include credit cards, auto loans for buying new or used cars, and recreational transportation. Households also borrow to fund children's and adults' education, pay medical bills, and complete home improvement projects or urgent repairs.

Following BNM (2018), Malaysian households primarily acquire financing to purchase residential properties and motor vehicles. Approximately 53.7% of the total household financing were with registered financial institutions. Other borrowings involved the purchase of non-residential properties, personal consumption, financial security investments, and credit card payments. The household constitutes a large portion of the bank balance sheet. Seho, Ibrahim and Mirakhor (2021) claimed that household sectors attract the largest loan and financing portion in Malaysian banks where both conventional and Islamic institutions are exposed to household sectors at 50% and 64%, respectively. The provision of financing to household sectors might lead to risk exposure given their vulnerability to inflation, unemployment, income and interest rate changes (Nakornthab 2010), and high banking fragility (Charpe & Flaschel, 2013). Several prior empirical studies have examined the relationship between household financing and financial performance. Most of the previous scholars found an inverse relationship between household financing and the financial performance of banks (Dinc, 2018; Prastivi & Anik, 2021; Nizar & Abdul Karim, 2021).

Under the stakeholder theory, it is deemed pivotal to balance stakeholder or customer needs, for economic benefits. Thus, this study hypothesised that household sector financing negatively impacted the Islamic bank financial performance. The following hypotheses were developed based on the aforementioned arguments:

*H4a: There is a negative and significant relationship between household financing and the ROA of Islamic banks in Malaysia.*

*H4b: There is a negative and significant relationship between household financing and the ROE of Islamic banks in Malaysia.*

### **Non-Performing Financing**

Asset quality implies a bank management element that requires organisational asset evaluation to identify bank measurement level and credit risk size (Adeolu, 2014). Regarding the traditional role of banks, financing constitutes the bulk of bank assets, including Islamic institutions. Based on traditional bank functions, loans or financing entails a primary proportion of bank assets. Bank operation and performance optimisation require further examination of revenue-generating bank assets. Strategic credit risk management proved pivotal for effective and immediate risk control as high bank financing levels inevitably increased credit risk. The

non-performing financing or default or impaired financing ratio were typically utilised to assess bank credit risk management using the non-performing financing proportion-to-total financing amount (; Ghenimi et al., 2021).

Based on conventional bank roles, financing constitutes a large proportion of bank assets, including that of Islamic banks. High bank financing rates would lead to credit risk, which is measured by the non-performing financing-to-total gross financing ratio. The decrease in doubtful loans predicts high-quality banking assets. As such, a high non-performing financing ratio indicated high banking credit risk (Ghenimi et al., 2020). Several empirical studies conceded that high non-performing financing lowered the financial performance of banks. Ozurumba (2016) demonstrated that high non-performing financing potentially reduces both bank ROA and ROE. Samail et al. (2018) and Salike and Ao (2018) disclosed that non-performing financing adversely affected ROA, whereas Etale et al. (2016) revealed that non-performing financing negatively and significantly impacted the bank ROE. Any increase in the non-performing financing level could lower organisational performance, which is deemed logical as financial institutions need to keep more provisions and compensate defaulted clients. This study developed the following hypotheses following the aforementioned observations:

*H5a: There is a negative and significant relationship between the non-performing financing and the ROA of Islamic banks in Malaysia.*

*H5b: There is a negative and significant relationship between the non-performing financing and the ROE of Islamic banks in Malaysia*

### **Operational Efficiency**

According to Kalluru and Bhat (2009), operational or cost efficiency denotes organisational proficiency to prevent negative consequences and optimise resource usage for high-quality customer product and service delivery. Organisational operational efficiency depends on particular aspects involving competent and productive employees, utilised capital (Gupta & Raman, 2020), digitised intervention (Mohapatra & Mohanty, 2017), and organisational size (Deb, 2019). Banks function to minimise or manage their expenses and generate outputs without compromising their quality. Theoretically, financial institutions that could efficiently manage their expenditure demonstrate high profitability. The total operating income-to-total operating expense ratio is regarded as the proxy of bank operational efficiency. In this vein, operational efficiency enables organisations to save costs and elevate performance (Shou, et al., 2018).

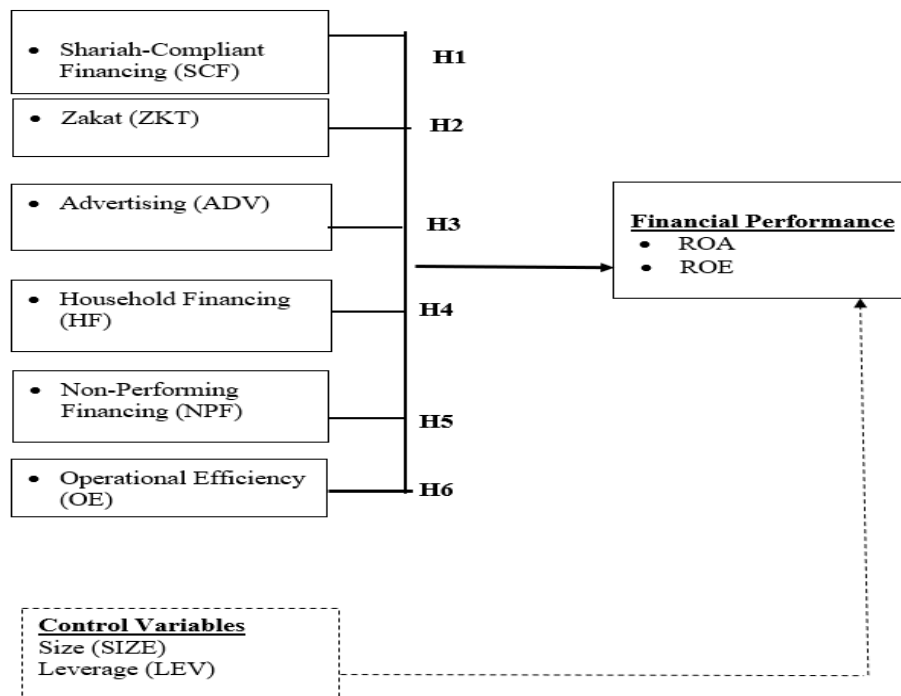
A high operational efficiency ratio represents the bank ability to effectively manage operating expenses and affect profitability. Past literature has identified an operational efficiency-financial performance correlation. Dietrich and Wanzenried (2014), Adelopo et al. (2018) determined a significant and negative operational efficiency-financial performance relationship proxied by ROA and ROE indicators. Nevertheless, several studies revealed a negative impact of operational efficiency on organisational ROA (Bougatef, 2017) and ROE (Azad et al., 2018). In this regard, companies that operate with minimal costs would enhance organisational financial performance. This study developed the following hypotheses:

*H6a: There is negative and significant relationship between operational efficiency and the ROA of Islamic banks in Malaysia.*

*H6b: There is negative and significant relationship between operational efficiency and the ROE of Islamic banks in Malaysia.*

### Overview of Theoretical Model

The study framework (see Figure 3) was conceptualised to develop the variable correlations. The stakeholder theory was incorporated as the research framework foundation. The independent variables consist of six indicators; Shariah-compliant financing, Zakat, advertising, household financing, non-performing financing and operational efficiency. Then, the study tests the relationship between such independent variables and dependent variables i.e financial performance. Two control variables (size and leverage) were also incorporated. The conceptual study framework is illustrated as follows:



**Figure 3: Conceptual Framework**

### Methodology

#### Study Population, Sample and Sources of Data

All 16 Malaysian Islamic banks were selected as study samples. The list of Malaysian Islamic banks was derived from the official BNM website in 2019. The data of the study were collected from the annual reports of the banks for a period of ten years (2010-2019).

#### Measurement of Variables

The independent variables consist of six indicators; Shariah-compliant financing, Zakat, advertising, household financing, non-performing financing and operational efficiency. Table 1 presents the measurement of independent variable of the study.



**Table 1: Measurement Independent Variable of the Study**

Variable	Measurement	Sources
Shariah compliant-financing	Interest free Income / Total Income	Mohammed et al. (2015), Asutay and Harningtas (2015), Noordin and Hudaefi (2019).
Zakat	Zakat / Net Asset	Noordin and Hudaefi (2019), Rosman et al. (2019).
Advertising	Advertising Expenses / Total Expenses	Noordin and Hudaefi (2019)
Household financing	Household Financing / Total Financing	Dinc (2018), Nizar and Abdul Karim (2021)
Non-performing Financing	Non-performing financing / Total Financing	Ozurumba (2016), Samail et al. (2018), Ghemini et al. (2021)
Operational efficiency	Total Expenses / Total Revenue	Dietrich and Wanzenried, (2014)

Meanwhile, the measurement of dependent and control variables of the study are presented in the Table 2 and Table 3 respectively.

**Table 2: Measurement of Dependent Variable of the Study**

Variables	Measurement	Sources
Financial Performance	Return on Asset: Net Profit / Average Total Asset	Mallin et al. (2014), Buallay, (2019)
	Return on Equity: Net Profit / Average Shareholder's Equity	

**Table 3: Measurement of Controlling Variable of the Study**

Variables	Measurement	Sources
Size	The natural logarithm of total asset of the banks	Platonova et al. (2018), (2018), Devie, et al. (2018), Buallay, (2019)
Leverage	Total liabilities/ Total assets	Platonova et al. (2018)

## Models

The two multiple regression models below test the direct influence of independent variables on the dependence counterparts to achieve the objective of the study. The equations for the regression model in this study are expressed as follows:

ROA Model:

$$ROA_{it} = a_0 + B_1SCF_{it} + B_2ZKT_{it} + B_3ADV_{it} + B_4HF_{it} + B_5NPF_{it} + B_6OE_{it} + B_7SIZE_{it} + B_8LEV_{it} + \varepsilon_{it} \quad (1)$$

ROE Model:

$$ROE_{it} = a_0 + B_1SCF_{it} + B_2ZKT_{it} + B_3ADV_{it} + B_4HF_{it} + B_5NPF_{it} + B_6OE_{it} + B_7SIZE_{it} + B_8LEV_{it} + \varepsilon_{it} \quad (2)$$

Where,

For each bank ( $i$ ) and each year ( $t$ )

$\alpha$  = Constant

ROA = Return on Assets

ROE = Return on Equity

SCF = Shariah-Compliant Financing

ZKT = Zakat

ADV = Advertising

HF = Household Financing

NPF = Non-Performing Financing

OE = Operational Efficiency

SIZE = Size of banks

LEV = Leverage

$\varepsilon$  = Error

### Findings of the Study

In this section, the results of the descriptive statistics of the variables and regression analysis are presented. Several diagnosis tests, such as multicollinearity, heteroscedasticity, serial correlation and Hausman tests were conducted prior before undertaking the regression analysis.

#### Descriptive Analysis

Table 4 presents the descriptive statistics for dependent and independent variables of the study.

**Table 4: Descriptive Statistics for Dependent and Independent Variables**

Variables	N	Mean	Median	Standard Deviation	Min	Max
ROA	151	0.69	0.77	0.45	-1.67	1.68
ROE	151	9.83	10.60	6.19	-9.81	30.67
SCF	151	73.80	75.21	7.95	49.09	87.49
ZKT	151	0.08	0.01	0.13	0.00	0.62
ADV	151	3.07	2.17	2.49	0.01	12.05
HF	151	55.87	58.28	19.83	3.38	87.98
NPF	151	2.14	1.49	2.07	0.33	12.02
OE	151	52.03	47.61	17.11	21.20	100.52
SIZE	151	9.90	9.93	1.00	7.72	12.41
LEV	151	0.91	0.92	0.04	0.79	0.86

Based on the descriptive statistics in Table 6, the ROA represented an average of 0.69% with minimum and maximum values of -1.67% and 1.68%, respectively. Meanwhile, the average ROE reflected 9.83% with a minimum and maximum value of -9.81% and 30.67%, respectively. The ROA-ROE variations demonstrated in their mean and minimum and maximum values implied that some Islamic banks substantially profited between the reviewed periods as opposed to other financial institutions. This essential difference accounts for the reason why all the measures were incorporated into this study. The means score of financial performance was supported by the Islamic Financial Services Board (2020) report where the current profitability of Malaysian Islamic banks with regards to ROA and ROE indicated a substantial increase compared to their conventional counterparts.

The average SCF reflected 73.80% with minimum and maximum values of 49.09% and 87.49%, respectively. The mean value of SCF (73.80%) implied that most of the Malaysian Islamic bank revenues originated from Shariah financing contracts: *Bai' Bithaman Ajil*, *Bai' Inah*, *Mudharabah*, *Musharakah*, *Murabaha*, *Istisna'*, and *Ijarah*. Meanwhile, the remaining bank revenues were extracted from financial investment, fees, commissions and others. The research findings paralleled Zaini et al. (2018) where most of the Malaysian Islamic bank revenues originated from SCF. Table 4 also outlines a mean of 0.08% for ZKT with minimum and maximum values of 0% and 0.62%, respectively. On average, Malaysian Islamic banks paid an average of 0.08% ZKT from net assets with the highest reflecting 0.62%. Notably, few Islamic banks such as Al-Rajhi Banking and Investment Corporation, Kuwait Finance House, HSBC Amanah, and Standard Chartered Saadiq paid zero ZKT. Such foreign-owned Islamic banks do not pay Zakat on behalf of their shareholders. Likewise, a local study of Rosman et al. (2019) documented a low mean of ZKT from 2011 to 2018. Regarding ADV, the mean reflected 3.07% with minimum and maximum values of 0.01% and 12.05%, respectively. The mean value of ADV during the study period implied low ADV expenses among Malaysian Islamic banks. This outcome paralleled Kamarulzaman and Madun (2013) where the marketing strategies of Malaysian Islamic banks (ADV activities) remain inadequate with much room for improvement. Regarding HF, Table 4 presents the percentage of HF ranging from 3.38% to 87.98% with a mean of 55.87%. The mean value of HF implied that Islamic banks disbursed up to 56% of their total financing to household sectors between 2010 and 2019. The research outcomes corresponded to Seho et al. (2021) where most Malaysian Islamic bank financing funds household sectors. The mean of NPF reflected 2.14% with minimum and maximum values of 0.33% and 12.02%, respectively. The mean value of NPF indicated that Malaysian Islamic banks experienced extremely low NPF during the study period. A low NPF mean value was similarly documented by Isaev and Masih (2017) where Malaysian Islamic financial services have undergone high growth stability and asset quality when compared to their counterparts in neighbouring nations. Such study discovered that the asset quality proxied by the NPF ratio on Malaysian Islamic bank assets falls well below that of their conventional counterparts. This study also incorporated OE with a mean value of 52.03% and minimum and maximum values of 21.20% and 100.52%, respectively. Several banks reported losses during the research period following high operating expenses. Notwithstanding, the overall mean value of OE demonstrated that Malaysian Islamic banks could control their OE. Other variables (SIZE and LEV) were considered to control potential differences among Islamic banks. Essentially, SIZE was assessed by the natural logarithm of total assets with a mean value of 9.90 and minimum and maximum values of 7.72% and 12.41%, respectively. Meanwhile, LEV (as measured with total liability by total assets) denoted a mean of 0.91% with minimum and maximum values of 0.79% and 0.86%, respectively. The SIZE is commonly employed in past literature to control the advantages of bigger and smaller bank sizes while LEV is typically employed to control bank risk levels.

### Diagnosis Test Analysis

This section elaborates on the diagnostic tests conducted on the data for regression assumption testing. The diagnostic tests were first performed to analyse data distribution in terms of normality and multicollinearity. The diagnostic tests related to panel data (homoscedasticity, autocorrelation and Hausman test) were subsequently justified.

Normality implies data distribution and ascertains whether the data patterns denote normal distribution. The normality test in this study was performed by evaluating the skewness and kurtosis values of the variables. In Hair et al. (2014), the critical value at +/- 2.58 (0.01

significant level) and +/- 1.96 (0.05 significant level) is comparable to the Z-value from variable kurtosis and skewness. This value was computed by dividing the statistic value of skewness and kurtosis over its error value. In Table 5, the computed Z-value for skewness and kurtosis exceeded the specific critical value excluding ROE and SIZE.

**Table 5: Normality Test**

Variables	Skewness			Kurtosis			Normal
	Statistic	Error	Z-value	Statistic	Error	Z-value	
ROA	-1.645	0.197	-8.35	5.789	0.392	14.77	X
ROE	-0.070	0.197	-0.36	0.809	0.392	2.06	√
SCF	-0.997	0.197	-5.06	0.728	0.392	1.86	X
ZKT	1.960	0.197	9.95	3.830	0.392	9.77	X
ADV	1.328	0.197	6.74	1.710	0.392	4.36	X
HF	-0.600	0.197	-3.05	-0.223	0.392	-0.57	X
NPF	2.443	0.197	12.40	6.456	0.392	16.47	X
OE	0.860	0.197	4.37	0.027	0.392	0.07	X
SIZE	0.089	0.197	0.45	-0.201	0.392	-0.51	√
LEV	-1.768	0.197	-8.97	2.625	0.392	6.70	X

Table 5 indicates that most study variables are non-normal. Nevertheless, Gujarati and Porter (2010) denoted that the normality assumption for large data is not a serious issue. Specifically, Gujarati and Porter (2010) stated that a large sample size includes observations exceeding 100. Hair et al. (2014) and Pallant (2010) explained that the sample size is deemed large with observations exceeding 30. As the current study observations (151) exceeded 100, violation of the normality assumption would not be regarded as a serious issue.

Correlation analysis was employed in this study to identify the presence of multicollinearity among independent variables, which could affect their relationship with the dependent variables in regression analysis. Notably, multicollinearity arises in the correlation matrix when the correlation values indicate 0.90 and above (Pallant, 2010). Based on Table 6, all the correlation values were under 0.90, thus indicating the absence of correlations among all the study variables.

**Table 6: Correlation Matrix**

Variables	ROA	ROE	SCF	ZKT	ADV	HF	NFL	OE	SIZE	LEV
ROA	1									
ROE	0.849**	1								
SCF	0.259**	0.293**	1							
ZKT	0.262**	0.393**	-0.238**	1						
ADV	0.155	0.098	-0.177**	0.213**	1					
HF	0.550**	0.054**	0.201*	0.291**	0.188*	1				
NPF	-0.484**	-0.506**	-0.392**	-0.080	-0.088	-0.476**	1			
OE	-0.694**	-0.786**	-0.312**	-0.062	-0.007	-0.553**	0.444**	1		
SIZE	0.503**	0.666**	0.352**	0.393**	0.074	0.552**	-0.367**	-0.594**	1	
LEV	0.056**	0.702**	0.410**	0.228*	0.142	0.526**	-0.680**	-0.583**	0.622**	1

\*\* . Correlation is significant at the 0.01 level (2-tailed).

\*\* . Correlation is significant at the 0.01 level (2-tailed).

In addition, Variance Inflation Factor (VIF) and Tolerance (1/VIF) tests were conducted in order to detect any multicollinearity in the data set. Hair et al. (2014) argued that multicollinearity issues arise if the VIF values are greater than 10 or tolerance values smaller

than 0.10. The existence of the problem of multicollinearity could not be verified when referred to Table 7, as the variables have VIF less than 10 with an average of 1.99 and 1/VIF values above the threshold of 0.10.

**Table 7: Variance Inflation Factors**

Variables	ROA Model		ROE Model	
	VIF	Tolerance Value	VIF	Tolerance Value
SCF	1.65	0.6057	1.65	0.6057
ZKT	1.62	0.6188	1.62	0.6188
ADV	1.14	0.8781	1.14	0.8781
HF	1.88	0.5323	1.88	0.5323
NPF	2.09	0.4796	2.09	0.4796
OE	2.07	0.4822	2.07	0.4822
SIZE	2.58	0.3876	2.58	0.3876
LEV	2.89	0.3461	2.89	0.3461
Mean VIF	1.99		1.99	

Modified Wald, Wooldridge and Hausman tests shown in Table 8. Following Greene (2008), a null hypothesis implies no groupwise heteroscedasticity while a rejected null hypothesis denotes a case of groupwise heteroscedasticity. Table 8 presents the Modified Wald test for both study models. The p-values for both models documented significant values at  $p < 0.01$  while the null hypothesis of no group-wise heteroscedasticity was rejected for both ROA and ROE models. Meanwhile, in detecting the existence of serial correlation in the models of the study, the Wooldridge test was employed. Table 8 demonstrates the p-values of both models to be under 0.05. The null hypothesis is rejected with a p-value under 0.05 and indicates the presence of autocorrelation for both ROA and ROE research models. Therefore, the problem of heteroscedasticity and autocorrelation in the data of the study were corrected by employing White robust standard error estimators in regression analysis.

The Hausman test is generally performed to select between fixed-effect and random-effect study models. Based on the null hypothesis underpinning the test, fixed-effect and random-effects model estimators did not significantly vary. Conclusively, the random-effects model is deemed inappropriate if the null hypothesis is rejected, thus implying the use of the fixed-effects model. In the event of a significant p-value (under 0.05), the fixed-effects model should be applied as using random-effects would induce bias. Based on Table 8, the Hausman test results suggested that the random-effects model would be more appropriate for the ROA model (p-value  $> 0.05$ ) while the fixed-effects counterpart would be more adequate for the ROE model (p-value  $< 0.05$ ). The test discrepancies for both models occurred following the difference in the predictor measurement within regression models. The results of Hausman tests for both models are in line The Hausman test outcomes for both models corresponded to Ali et al. (2021) who reported different regression models for the ROA and ROE of Islamic banks.

**Table 8: Diagnostic Tests**

Test	ROA Model		ROE Model	
	Chi <sup>2</sup> /Statistic	P-value	Chi <sup>2</sup> /Statistic	P-value
Bruesch-Pagan	11.06	0.0004	24.65	0.0000
Wooldridge	12.317	0.0032	5.697	0.0306
Hausman	3.8110	0.8738	23.8917	0.0024

### Multiple Regression Analysis

Two regression analyses were run representing both the Islamic bank financial performance measurement (ROA and ROE) for hypothesis testing. The current study employed the EViews software Version 14 for regression outcome analysis. White robust covariance was incorporated as a robust estimator to rectify the presence of heteroscedasticity and auto-correlation in the study models. This estimator would generate highly precise coefficient standard errors in the research models. This covariance was selected in line with Sekhon and Kathuria's (2019) recommendations. Table 9 summarises the direct relationship outcomes involving independent and control variables with financial performance proxied by ROA and ROE. Both models demonstrated a significant level of 1% with an adjusted R-square of 0.3982 and 0.8357 for the ROA and ROE models, respectively. Based on the statistics, the ROA and ROE models justified 39.82% and 83.57% of the financial performance variance, respectively.

**Table 9: Regression Results of ROA Model**

Variables	Expected Signs	ROA			ROE		
		Beta	t	p-value	Beta	t	p-value
SCF	+	0.0064	1.9135	0.0577*	-0.0312	-0.6318	0.5286
ZKT	+	0.8465	5.7825	0.0000***	8.4511	3.6913	0.0003***
ADV	+	0.0150	1.7949	0.0748*	0.3172	1.9539	0.0529*
HF	-	0.0032	0.9981	0.3199	0.0315	0.9883	0.3249
NPF	-	-0.0299	-1.0546	0.2934	-0.4422	-2.4486	0.0157**
OE	-	-0.0168	-6.4702	0.0000***	-0.2157	-8.3439	0.0000***
SIZE		-0.0554	-1.1608	0.6037	-1.3934	-1.5786	0.1169
LEV		-1.1474	-0.5151	0.2477	20.1609	0.8389	0.4031
Constant		2.4437	1.4989	0.1361	16.1998	0.8523	0.3918
R <sup>2</sup>		0.4303			0.8609		
Adjusted R <sup>2</sup>		0.3982			0.8357		
F-Statistic		13.4048			34.1659		
Prob (F-statistic)		0.0000			0.0000		
Observation		151			151		

Based on Table 9, SCF was positively related to financial performance at a significant level of 10% in terms of ROA. This effect implied that an increase in SCF value would elevate that of the ROA for optimal bank performance. Nevertheless, the ROE model demonstrated a negative and insignificant relationship between SCF and ROE. As such, the results supported **H1a** and did not support **H1b**. Both regression model outcomes denoted a positive and significant relationship between ZKT and the financial performance of Islamic banks. The study outcome reflected a significant level of 1% for both ROA and ROE. Resultantly, a high Islamic bank ZKT contribution would optimise financial performance in terms of ROA and ROE. Notably, both **H2a** and **H2b** were supported. Based on the study assumptions, ADV was positively associated with financial performance. The research outcomes implied that ADV was positively related to financial performance at a significant level of 10% in both the ROA and ROE models. As such, increased ADV expenditure could enhance Islamic bank profitability to familiarise customers with Islamic banking product and service benefits. In this vein, **H3b** and **H3b** were supported. Although HF perceivably reflected an inverse relationship with bank financial performance, the beta coefficient result reflected a positive and insignificant HF-financial performance connection at a p-value exceeding 10% for both ROA and ROE models. The coefficients imply that high HF disbursement by Islamic banks induces high bank ROA and ROE. Notwithstanding, the outcomes offered no sufficient evidence to support this notion and did not support **H4a** and **H4b**. Although the study findings reflected a negative coefficient value of NPF for both the ROA and ROE models, only the ROE model demonstrated a negative

and significant NPF-financial performance relationship at a 1% significant level ( $p < 0.05$ ). As such, the results did not support **H5a** but supported **H5b**. The results of the study show that OE was negatively related to financial performance at a 1% significant level in both ROA and ROE models. The outcomes complemented the idea that organisations with minimal operational costs potentially optimise the bank profitability represented by ROA and ROE ratios. Overall, **H6a** and **H6b** were supported.

## Discussion

The multiple regression results in Table 9 implied a positive and significant relationship between SCF and ROA. Regardless, the ROE model outcome demonstrated a negative and insignificant relationship between SCF and ROE. The ROA model results corresponded to Pratama and Febrianshah (2020) and Abbas and Arizah (2019) where SCF contracts constituting *Mudharabah* and *Musharakah* financing positively and significantly affected the financial performance proxied by ROA. Furthermore, Afkar (2017), Ijaiya et al. (2021), and Yusof and Isa (2021) revealed that debt-based financing (*Murabahah*, *Bai Ajil*, *Qard Hassan*, and *Ijarah*) positively impacted the bank ROA. Conclusively, the implementation of SCF contracts could enhance bank profitability compared to the non-compliant financing products and services offered by conventional banks. Such contracts are also favoured by Muslim consumers given their adherence to Shariah principles (Sayani & Miniaoui, 2013). The results of the study complemented the stakeholder theory where good stakeholder rapport, particularly with Muslim customers, to protect their religion through Shariah-compliant products and services would improve company performance. The ROE model results paralleled Syahri and Haryito (2020) where Shariah contracts (equity-based financing) in terms of *Musharakah* adversely impacted the bank ROE. Possible justifications could be linked to the fact that Shariah financing contracts originate from bank assets that unaffected its equity. Islamic bank equity is typically impacted by investment activities that are regulated by the bank treasury unit.

The multiple regression results in Table 9 depict a positive relationship between Zakat and financial performance for both ROA and ROE models. The study findings corresponded to Al-Homaidi (2021) who revealed significant positive impacts of Zakat on the financial performance proxied by ROA and ROE. Regarding ROA models, the results of the study paralleled Auliyah and Basuki (2021). Meanwhile, the results of ROE model corresponded to Al-Malkawi and Javaid (2017). Suggestively, Islamic banks that engage in socially accountable activities through Zakat contribution would boost economic growth, uphold justice, and manifest organisational success. Regardless, the results of the study contradicted Rosman et al. (2019) who found no evidence that Zakat contribution could substantially impact the ROA and ROE of Malaysian Islamic banks. Regarding the real Islamic financial institution goals of achieving social welfare and benefits, Zakat could function as a revenue-generation tool while simultaneously protecting the life of community members as a whole. The study outcomes paralleled the stakeholder theory from an Islamic perspective where Islamic banking and finance institutions should fulfil stakeholder needs by incorporating their social and Islamic values into economic development plans apart from increasing their financial performance. This fulfilment would induce sustainable stakeholder support towards their products and services in the short-run and long run and optimise bank performance.

Following the statistical results presented in Table 9, advertising positively and significantly affect the ROA and ROE of Islamic banks. The results of ROA model corresponded to Kim et al. (2019) where advertising positively impacted organisational ROA. Meanwhile, Mulchandani et al. (2019) indicated that high advertising expenses potentially increase the bank

ROE. Nevertheless, the study findings opposed that of Abdul Hamid et al. (2017) who revealed a significant and negative relationship between advertising and Malaysian Islamic bank ROA and ROE. Based on the study outcomes, aggressive marketing approaches, such as advertising, would expose customers to the offered products and services. Such approaches aim to create a new customer pool. Effective advertising would develop customer loyalty, trust, and support and organisational values (Amoako et al., 2017). Owing to various stakeholder perspectives on advertising, all stakeholder interests should be regarded and incorporated into organisational advertising strategies and tactics (Polonsky & Hyman, 2007). As such, the study findings paralleled the stakeholder theory where stakeholder needs should be prioritised in planning a company advertisement. In Mokhtar and Samsudin (2015), advertising in Islam should serve to increase audience members' knowledge apart from commercialisation and earning profit and remind customers to uphold Islamic values, positive attitudes, and strong emotions for good behaviour. In this vein, effective advertising could preserve consumers' mind by imparting knowledge on Islamic bank values and principles.

Based on the study hypothesis, household financing was positively associated with bank financial performance. Regardless, the statistical proof in the preceding section revealed an unsupported hypothesis. An insignificant and positive relationship between household financing and the bank financial performance was identified for both ROA and ROE models. The research results contradicted most past studies. Several empirical works disclosed a negative household financing-bank financial performance relationship (Nakornthab, 2010; Buyukkarabacak & Valev, 2012; Nizar & Abdul Karim, 2021; Prativi & Anik, 2021). Although the high financing channelled to household sectors would lower bank performance following past studies, the current work determined an insignificant and positive household financing-Islamic bank financial performance association. This may be because of the affordable Islamic bank products and services could minimise the number of defaulters. Meanwhile, Nakornthab (2010) supported that household financing is typically perceived to be a low risk given the segmented borrowers and their relatively smaller financing amount as compared to corporate financing. Therefore, providing financing for household sectors could protect family institutions with no adverse impacts on Islamic bank performance. It is provision of stakeholder theory that balancing the needs of such stakeholder helps in achievement of economic advantage of the company.

The study hypothesized a significant and negative relationship between non-performing financing and financial performance of the banks. However, the estimated results in Table 9 implied a negative and significant relationship between NPF and ROE. Meanwhile, the results of the study demonstrated a negative and insignificant relationship between NPF and ROA. The ROA model outcome paralleled Alshebmi et al. (2020) who disclosed an insignificant NPF-ROA link. The results of the study could be associated with the minimal amount of default payments by Islamic bank customers over the study period (2010 to 2019). The regression results of the ROE model corresponded to Ozurumba (2016) and Etale et al. (2016) who revealed a significant and negative effect of asset quality proxied by the NPF on bank ROE. Perceivably, the asset quality measured by the NPF ratio adversely impacted bank ROE. In other words, a low NPF ratio value could increase Islamic bank profitability. Also, Adeolu (2014) affirmed that improper asset quality management potentially increases NPF and instigates financial distress in banks. The multiple regression results involving the OE-financial performance relationship demonstrated a significant and negative relationship between the two variables. The OE inversely impacted both the bank ROA and ROE. The regression results of OE on ROA and ROE paralleled Dietrich and Wanzenried (2014) and Adelopo et al. (2018)



where a significant and negative impact of OE was determined on the financial performance proxied by both organisational ROA and ROE. As such, high OE would result in bank profitability by mitigating Islamic bank costs. Resultantly, bank operational costs should be reduced to sustain high OE and bank financial performance. Theoretically, the aforementioned statement reflects the stakeholder theory where stakeholders' wealth should be safeguarded for optimal organisational performance. Thus, the bank management should strive to manage asset quality and increase operational efficiency given the important roles of asset quality and operational efficiency as a reflection of the competitive and financial performance level of Islamic banks.

### **Conclusion**

The objective of the study is to examine the effects of determinants of financial performance of Malaysian Islamic banks. Six determinants represented by Shariah-compliant financing, Zakat, advertising, household financing, non-performing financing and operational efficiency. The study used ROA and ROE measures for financial performance and included two control variables, i.e., size and leverage of the banks. The study investigated a sample of 16 local Malaysian Islamic banks over 10 years from 2010 to 2019. The study findings offered empirical support for the research framework, which contributes to the stakeholder theory with proof that complements their propositions. Under the stakeholder theory, Donaldson and Preston (1995) argued that stakeholder management and practices could impact corporate performance. Consistent with the stakeholder theory, engaging in good stakeholder management by Islamic banks could establish a virtuous stakeholder rapport and fulfil their needs to achieve high financial performance. Islamic banks might consider the research output to improve their operational management in line with its real objectives to support stakeholder interests and facilitate the sustainable economic growth of banks. The output could also alert the bank management to develop and integrate their current practices with business strategies for improved bank financial performance, a competitive advantage over other industry players, and valuable customer retention.

In terms of the limitations of the study, the study only utilised the secondary data extracted from the annual reports of 16 Islamic banks available on their websites between 2010 and 2019. The research data and results were derived from one country: Malaysia. As such, the study proved limited by its framework that only examined Malaysian Islamic banks. The research outcomes failed to represent the overall financial performance of Malaysian banks given the exclusion of conventional establishments. In this vein, the study could only be generalised across the context of Malaysian Islamic banks. Future scholars could broaden their scope beyond the Islamic banking industry to include other non-banking institutions, such as the development of financial institutions and insurance sectors.

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